

# DEI in the Built Environment of Schools

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# 1

## Introduction

# Introduction

Data shows...

- U.S. students are developing unhealthy relationships with school
- Negative media and systematic issues fuel this disconnect in school
- We need a transformational shift in how a school feels to support our future generations

Relationship between People & Place

- Students bring differences in race, age, neurodiversity, abilities, and socioeconomic status to schools
- Students' surroundings in schools impact both their mental and physical well-being





# Introduction

## Why DEI

DEI acknowledges, embraces, supports, and accepts all identities

- Racial, Sexual, Gender, Religious, Socioeconomic

Students deserve environments that can afford and provide equal access to

- learning spaces
- materials and resources
- accommodations

Create more thoughtful designs in learning environments that promote DEI to lead to better student outcomes of belonging and educational experience

*“Inclusive education is not about changing students to fit the system, it’s about changing the system to fit the students.”*

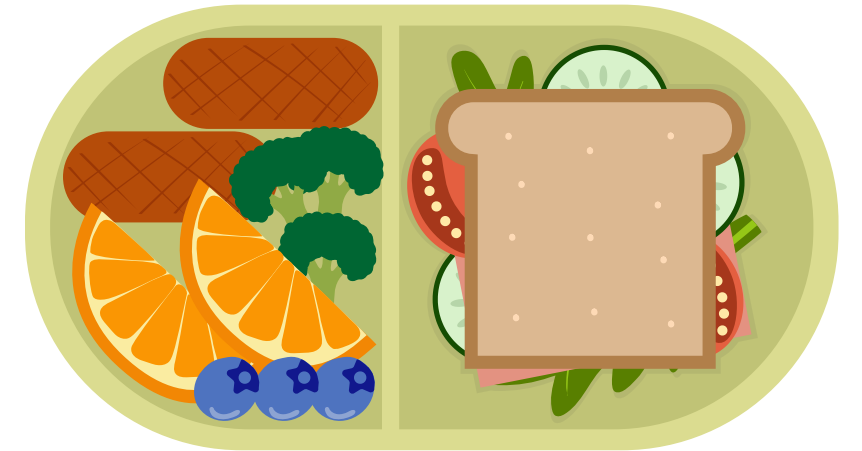
-Diane Richler (Champion of Inclusive Education)

# What is DEI

- Diversity, Equity, Inclusion
- Sometimes also recognized as EDI or DEIB (Belonging) or DEIA (Accessibility)
- DEI originates from the Civil Rights movement and aims to address discrimination and promote equal opportunities
- Supports all people who belong to historically marginalized groups
- DEI's current role in schools is in flux

## Example DEI Programs in Schools...

**Free & Reduced Lunch Programs**



**Special Education Programs**



**Mentorship Programs**



2

Thesis Statement

# Thesis Statement

If the framework of DEI extends beyond employee training and is **integrated into the design of the school environment**, campus well-being would improve, fostering a **stronger sense of belonging** among students and ultimately creating a **high-quality educational experience** accessible to all.

# 3

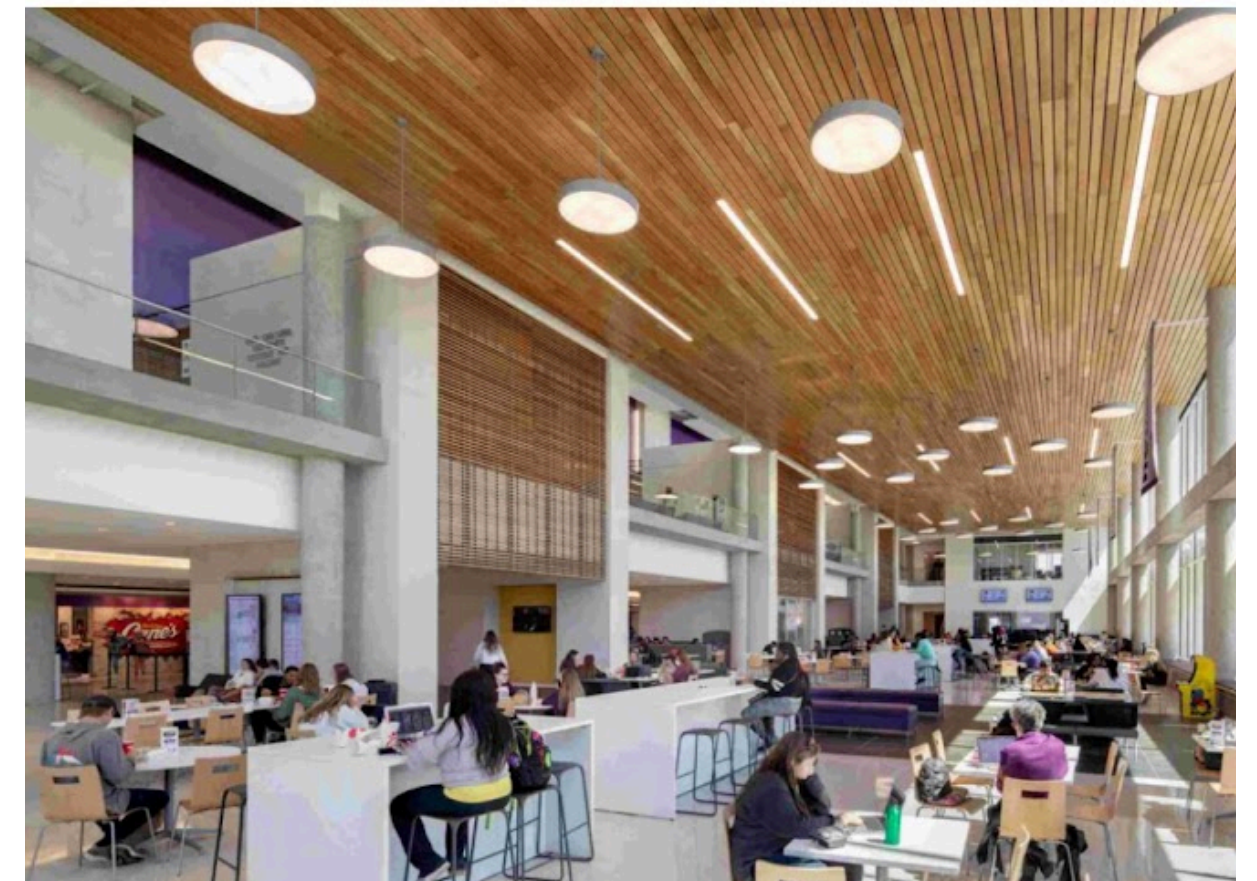
## Summary of Literature



# Summary of Literature

## Fostering Belonging

- Increased feelings of belonging = Increased academic performance in school
- Historically marginalized groups face challenges and disparities that carry over into the school environment
- Planning Identity spaces in school to promote community, new experiences, interests
- Create visibility on campus to enhance a healthy environment



East Carolina University Student Center

# Summary of Literature

## Outcomes for Historically Marginalized Groups



- Discouragement and manipulation of student's academic performance and experience
- Decreased rate in attendance
- Less campus participation
- Not being considered for future leadership positions
- Overlooked as award recipients, and positions that show a high level of recognition and achievement
- "...more likely to drop out before graduating from high school, less likely to attend college..." (Brannan & Kaufman, 2020).

# Summary of Literature

## Translating Well-Being in Interior Architecture & Design

- There is no accessible list of how to design and achieve DEI-informed design
- Basic & established codes and principles can be the base and start of DEI-informed design



**Universal Design standards**



**Trauma-informed design for healing**



**ADA standards for accessibility**



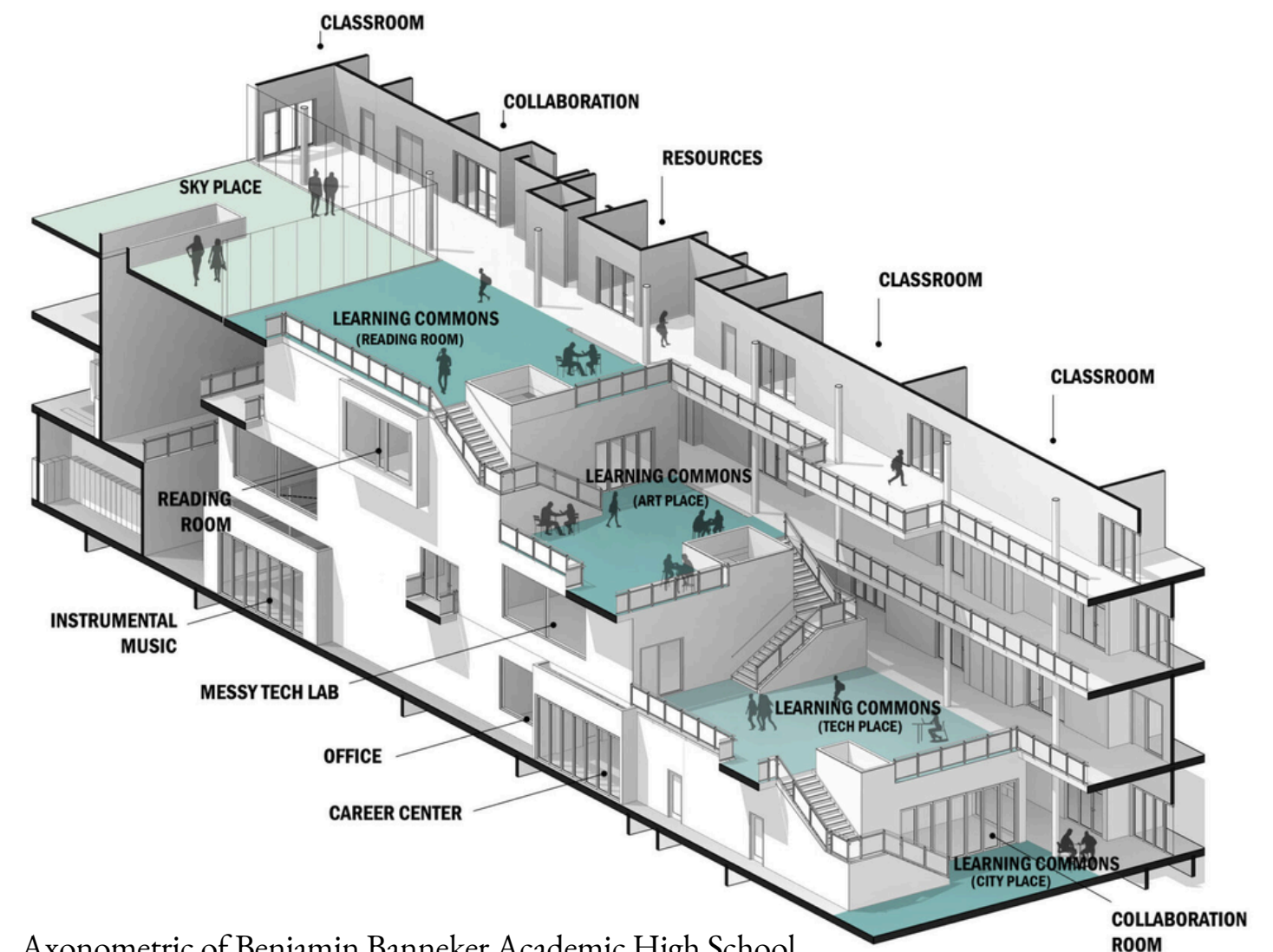
**Biophilic principles for well-being**



# Summary of Literature

## Programming DEI into the Interior Architecture & Design

- The Benjamin Banneker Academic High School in Washington DC by Perkins Eastman DC
  - Define the three basic behaviors in school: studying, socializing, collaboration
  - “Learning Commons” planned on every floor support the three behaviors
  - Creates a sense of achievement and balance throughout the entirety of the school
- Planning ADA- Gender-Neutral restrooms on campus instead of gender specific



Axonometric of Benjamin Banneker Academic High School



Benjamin Banneker Academic High School Learning Commons (City Place)



# Summary of Literature

## Planning DEI into Textiles and Furniture, Fixtures, and Equipment (FF&E)

- The Smithfield Elementary School in North Richland, Texas, by HKS Architects
  - project demographic: neurodiverse population and inclusive of all abilities
  - The materials used address both sensory and acoustical needs for their diverse population
    - Cork: both sustainable and good for “cognitive restoration” in the learning environment
  - Promoted flexibility by using adaptable, digital displays, flexible seating, and lighting for various activities



Cork behind Respite Areas



Flexible Seating and Lighting for Various Activities



# Summary of Literature

## Planning DEI into Textiles and Furniture, Fixtures, and Equipment (FF&E)

- The Carter School by Perkins&Will
  - Designed for neurodiversity
  - Addressed glare and noise by using glare-blocking exterior louvers, acoustic dampening panels, and white noise systems.
  - Red and yellow colors are easiest to see because they are the longest wavelength on the color spectrum applied to entrances/exits and the elevator lobby
  - Promote safety and comfort by using textured surfaces to help students with visual disabilities



Yellow Wall covering leading to entrance/exxit



Textured Surfaces to help aid visual disabilities

# 4

## Research Methods

# Research Methods

## Methodology and Research Design

- Collecting qualitative data to uncover the diverse student preferences of secondary school interiors
- Using a Needs assessment
- 30-45 min Interview held over Teams calls
  - A series of 12 interview questions to gather design preferences on 5 diverse topics
- The targeted sample was students (17-20 years old) currently enrolled in higher education who identifies as a member of a marginalized group

## Interview Topics



**Representation and cultural sensitivity**



**Gender inclusivity**



**Design of the learning environment**



**Feelings about belonging and quality of their educational experience**



**Future environment of high schools**

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## Discussion & Findings

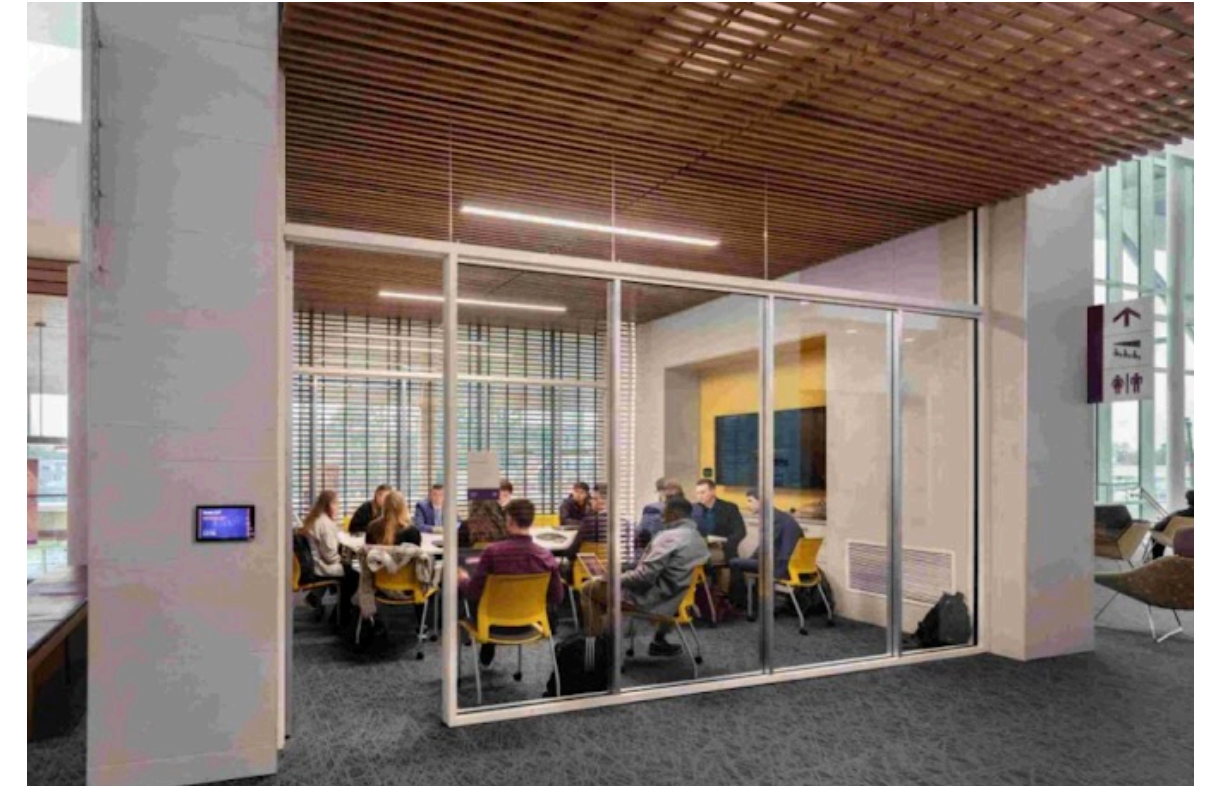


# Discussion & Findings

## Representation and Culture Sensitivity

*What elements in a school do you find culturally inclusive?*

- Having designated spaces for different clubs and groups
  - Many participants shared a lot of representation and cultural inclusivity comes from clubs and extracurricular outlets
- Having a shared thing to look forward to, and having a dedicated space that everyone in school can be together
- Elements in a school that represent community and appreciation feels culturally inclusive
- Implementing identity spaces like the Student Center at East Carolina University by Perkins and Will
  - promote visibility, fostering belonging and a healthy community



East Carolina University Identity Space



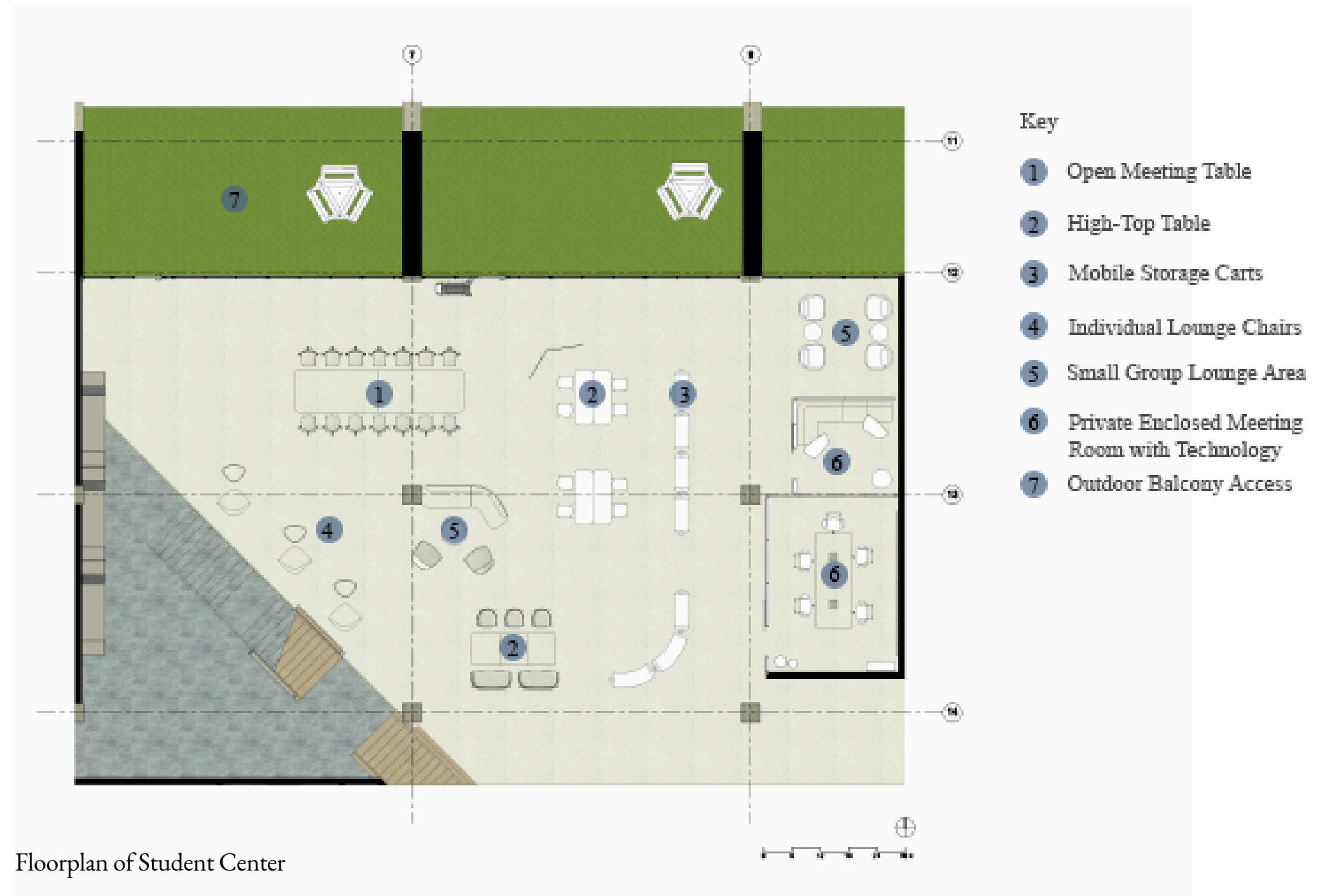
A Shared Experience

# Discussion & Findings

## Representation and Culture Sensitivity

*Would you like to have dedicated spaces in a school environment for discussions about culture and identity?*

- Everyone believed it was valuable to hold dedicated spaces to talk about culture and inclusion.
- Felt like their culture and history is easily disregarded, and having these spaces allow people to connect with others with a shared mindset and openness.
- It's important to have these physical spaces because social media is not enough to fulfill themselves.



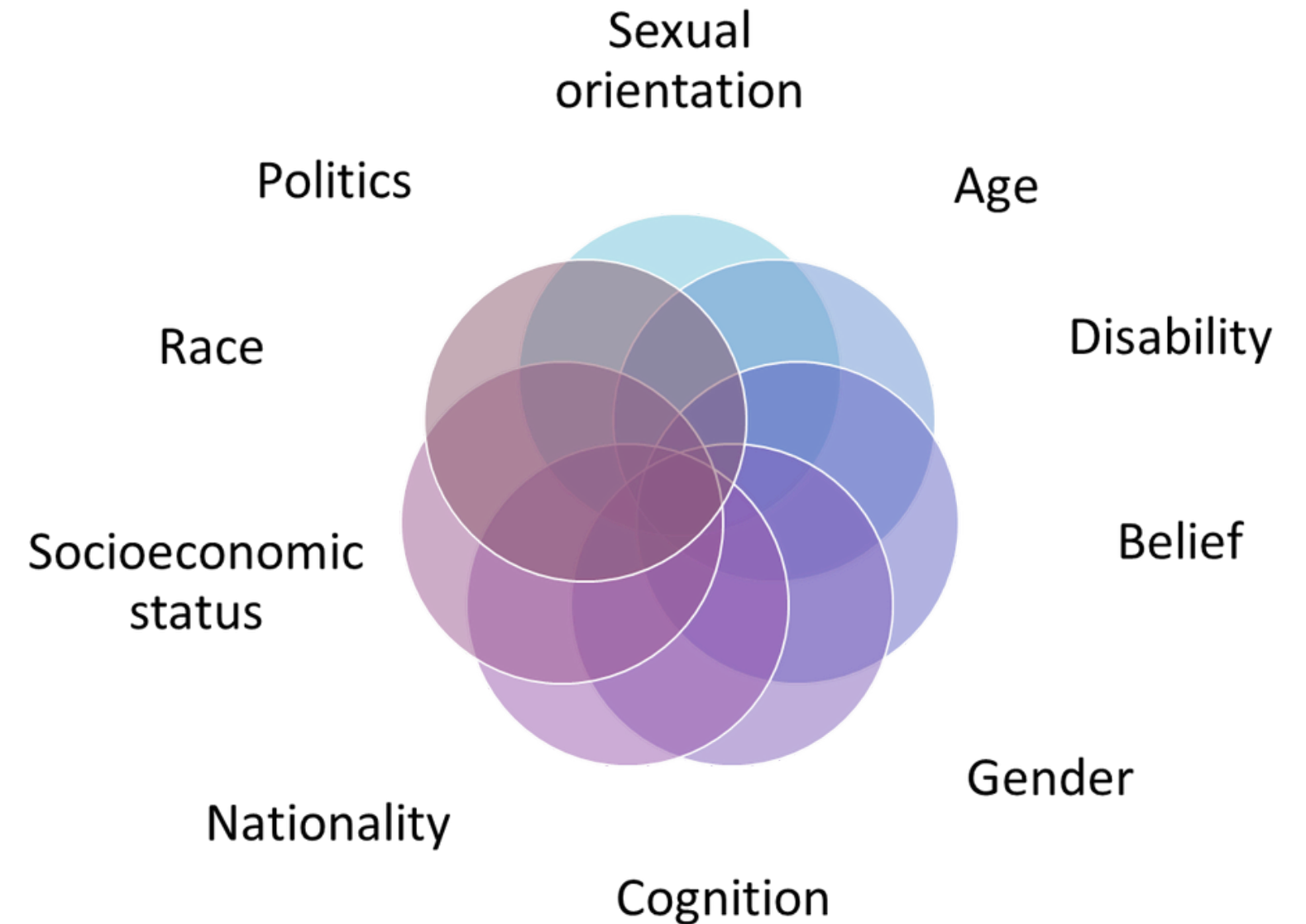


# Discussion & Findings

## Representation and Culture Sensitivity

*What types of displays in a school would make you feel that your culture is represented and included?*

- Displays that weren't obvious and felt like a literal stand-out thing. They were looking for more conceptual and integrated displays
- Representation with literal interpretations for example, flags and the culture behind their symbolism
- Displays that related to women's health for example, period products



# Discussion & Findings

## Gender Inclusivity

*Do you think high school students would feel more comfortable and safe with the inclusion of gender-neutral restrooms or changing areas?*

- 80% of participants believe that high school students would feel more comfortable and safe with the inclusion of gender-neutral restrooms or changing areas
- Not only necessary for gender identity and transitional phases, also related for this adolescent age to mitigate fear and stress
- Planning gender-neutral restrooms can relate to trauma-informed design and promote healing and safety



- Key
- 1 Sanitary Disposal Box
  - 2 Sink Clearance: 27" High, 30" Wide, 11-25" deep for Knee Clearance
  - 3 Vertical & Horizontal Grab Bars
  - 4 Toilet Seat Height: 18" from the Floor
  - 5 Lockable Doors for Security & Comfort
  - 6 60" Diameter Circle for Wheelchair Turning
  - 7 Full Height Doors & Walls for Privacy
  - 8 Minimum 32" Clear Opening

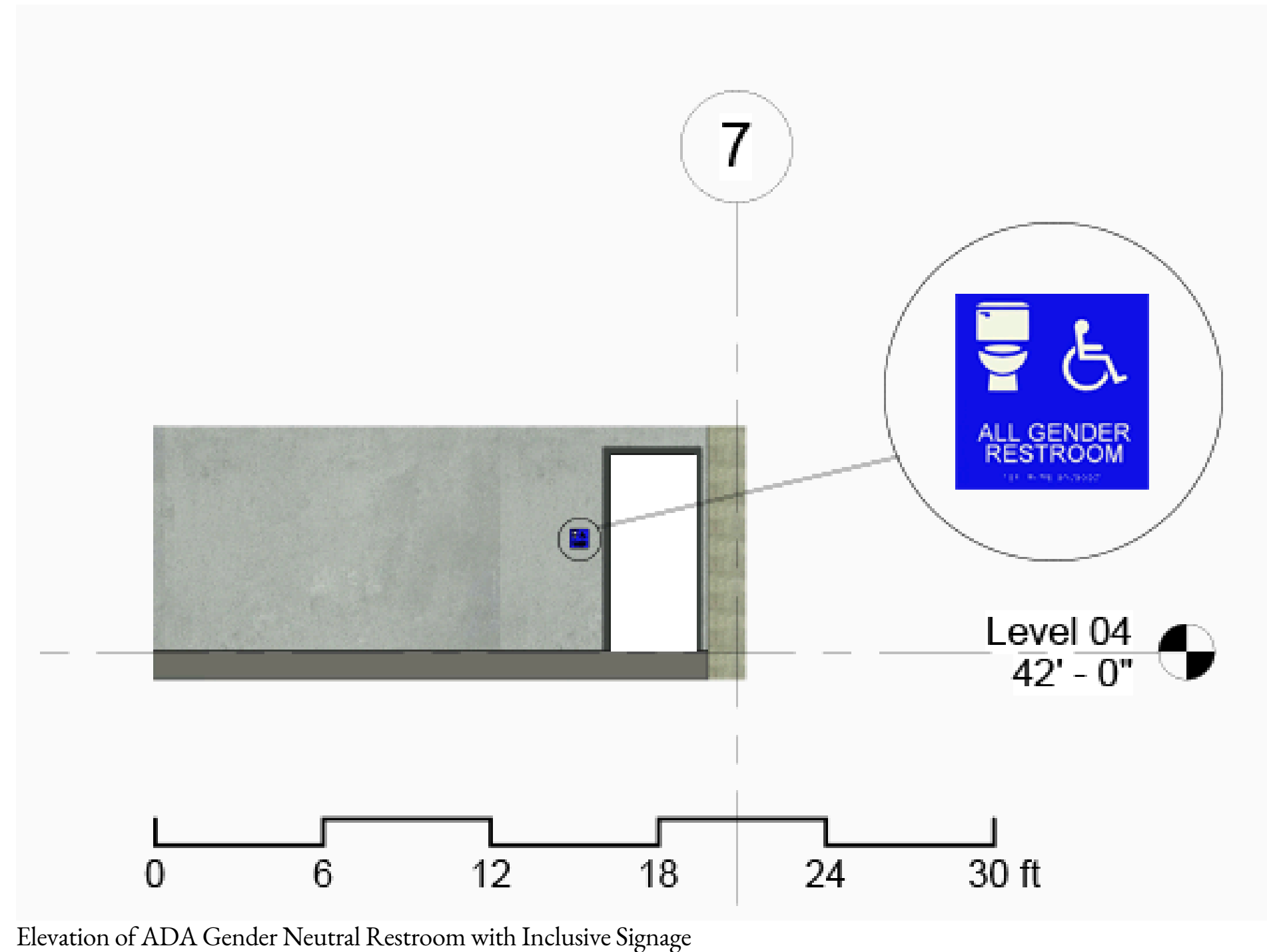
Axonometric of ADA Gender Neutral Restrooms

# Discussion & Findings

## Gender Inclusivity

*Do you think that design features in the school environment can help foster a sense of inclusion or, conversely, contribute to feelings of alienation for individuals of different gender identities?*

- What could be beneficial for one culture/identity, may not align with the other
- Design features can create inclusivity however, labeling it as a transgender restroom can contribute to feelings of alienation
- Design features that align with societal norms in schools are stressful and can cause feelings of alienation



# Discussion & Findings

## Design of the Learning Environment

*Do you believe that incorporating elements such as thoughtful space planning, appropriate lighting, and equitable access to technology and resources in classroom design can enhance students' ability to learn and engage*

- Importance of natural light and ventilation in the learning environment
- Furniture that can easily adjust and roll gives a better sense of control to help learn and engage
- Incorporation of these elements makes learning and engaging more enjoyable for both students and teachers
- Technology incorporated into the classroom designs also make students experience better because of personalization



Axonometric of Supportive Classroom

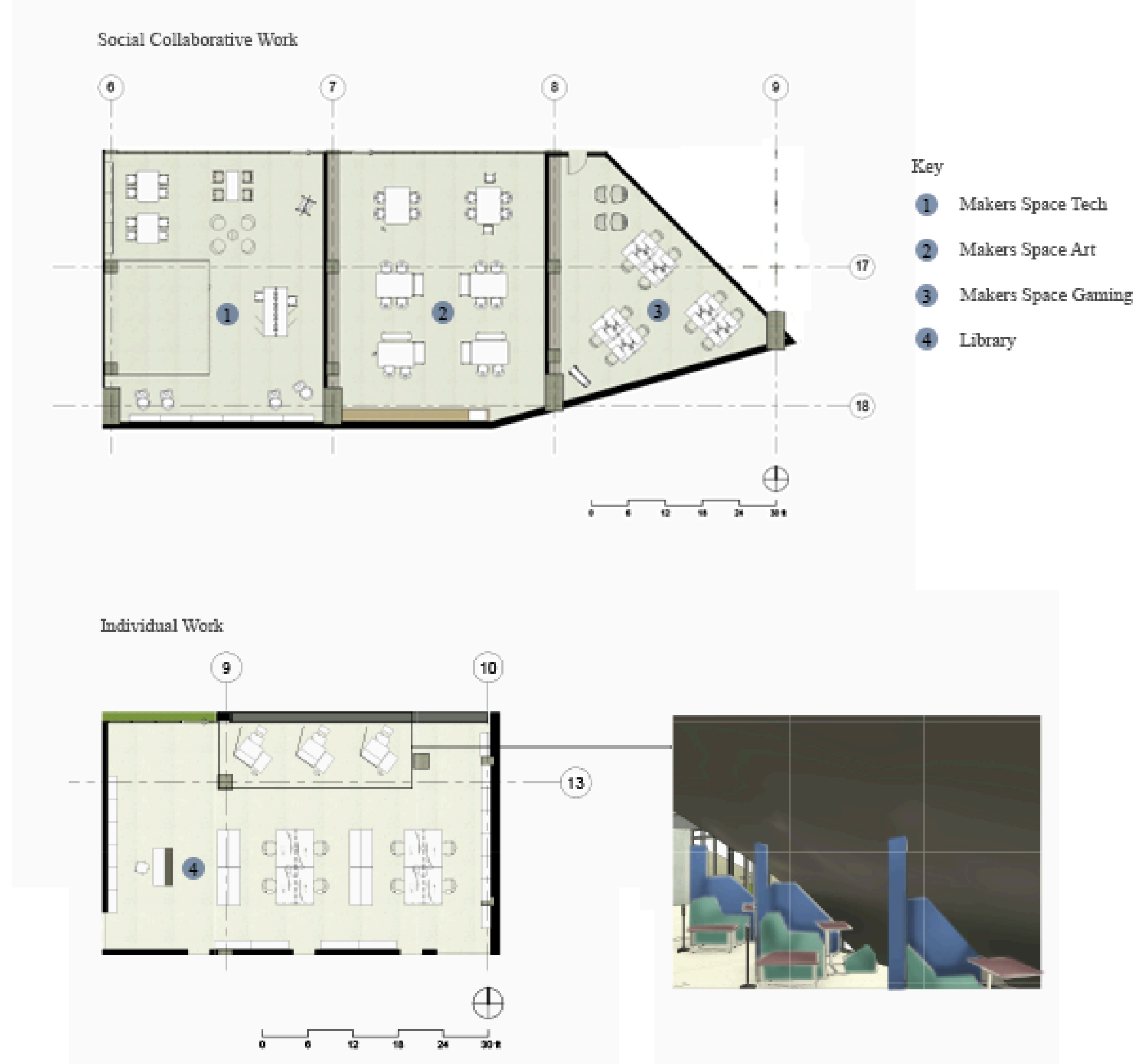


# Discussion & Findings

## Design of the Learning Environment

*“Do you think that, given students' diverse learning styles, they would benefit from school spaces designed for both quiet, individual work and social, collaborative activities?”*

- 100% of participants believe the balance of these spaces would benefit students
- Introverted learners and extroverted learners, each have their own needs to succeed
- A combination of these spaces makes the school day feel more inviting and comfortable for students
- Offering these different spaces allows for multiple paths of achievement for diversity within the school



# Discussion & Findings

## Feelings about Belonging and Quality of Educational Experience

*Do you prefer certain design elements in school that make you feel more included in the school community? Have you noticed any design features that might make students feel excluded?*

- The more open a school feels, the more included they feel in the school community
- Design elements in school (color and lighting) can make them feel more hyperaware and excluded
- Accessibility in a school and if the structure and fixtures aren't accommodating, its excluding to students
- Connection to color, graphics, and personalization can contribute to feelings of inclusion, and if a classroom feels generic, it doesn't make the space feel special creating exclusion



Marie Reed Community Learning Center Open Common Area

# Discussion & Findings

## Feelings about Belonging and Quality of Educational Experience

*Are there specific aspects of a school's physical environment that can affect your mental and emotional well-being?*

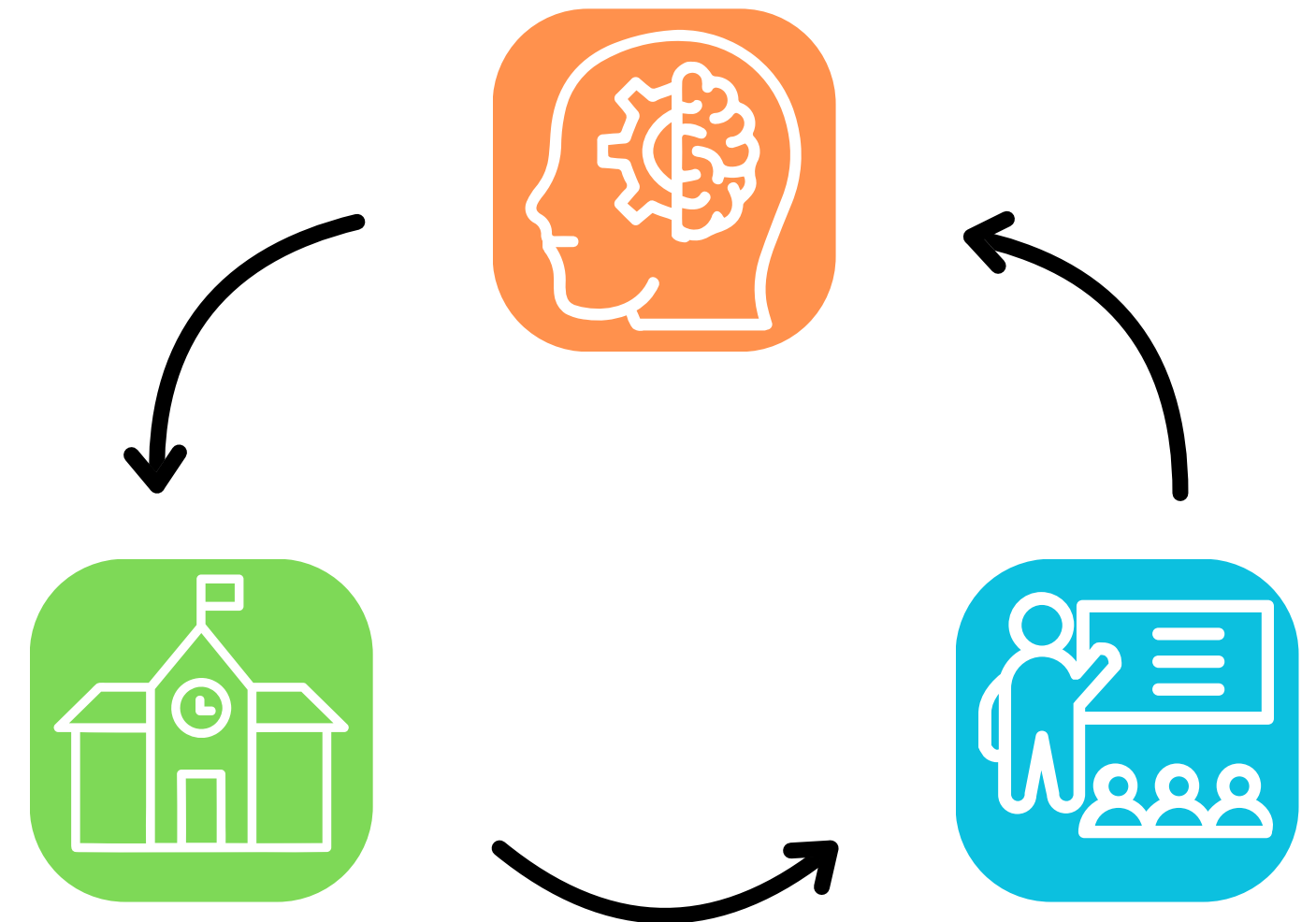
Environmental Stressors	Supportive Design Solutions
Small, narrow, straight edged hallways	Open, wide hallways with soft edges & natural flow
Lack of natural light	Abundant windows and skylights
No visibility or connection to the outdoors	Outdoor views, garden access, indoor-outdoor transitions
Unaccommodating furniture	Ergonomic, flexible seating that adapts to needs of the students
Cold or characterless spaces	Spaces with color, texture, warmth and student art to promote creativity
Lack of privacy	Designated quiet zones and pods
Poor communal layout	Open common areas, lounge areas, and collaborative workspaces
Outdated or absent technology	Integrated modern tech that supports learning and fosters wellness

# Discussion & Findings

## Feelings about Belonging and Quality of Educational Experience

*Do you believe that the design of the school environment influences the quality of education you receive?*

- A handful of the responses connected a third piece to this question which was the relationship and quality of the teacher related to the design of the school environment and quality of education
- If the design of the school environment doesn't reflect any character or personality and it's very plain, then becomes less engaging
- If the design of the school environment is not well equipped, then it makes it more difficult for the teacher to teach in the environment, then making it also hard for the students to receive and process information





# Discussion & Findings

## Imagining the Future Environment of High Schools

*In your ideal school environment, what features or improvements would enhance the experience for all students?*

- Accommodation already planned into the environment for students makes the school day less stressful and overall easier
- Maslow's hierarchy of needs chart to help plan a school environment to enhance the experience for all students
- Prioritizing socialization
- Creating visibility within the school
- Importance of self-expression and being able to grow in the school environment
- An environment that cares



# Discussion & Findings

# Imagining the Future Environment of High Schools

*Have you seen other school environments (e.g., on trips, in media) that you feel are better designed for inclusivity and belonging? What stood out about them?*

Shared buzz words the participants used to describe other school environments they felt were better designed for inclusivity and belonging



# 6

## Conclusion & Significance

# Conclusion and Significance of Project

- The strength of the student preferences from the Interview Questions suggest different ways to address diversity, equity, and inclusion within the interior design of high schools
- Inequality in the design of high schools creates differences in students' educational experience which holds consequences on their future outcomes
- This research promotes the beneficial outcomes for students when designing with DEI-informed design in schools
- DEI belongs in the school environment, and it can be pushed further into the design of school's regularly

## Supporting Design Interventions

- Identity Affirming Spaces
- Sensory & Visual Inclusion
- Inclusive Furniture
- Outdoor Learning Environments
- Low-Stigma Displays and Centers

*Thank You*